

IMPACT OF COMMUNICATION AND SUBSIDIES/INCENTIVES ON COMMUNITY BEHAVIOR CHANGE TOWARDS SANITATION & HYGIENE PRACTICES

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Abstract

This study unleashes the most important issue of today's era which is related to water, sanitation and hygiene facilities. This research describes the impact of communication and subsidies/incentives on community behavior Change towards sanitation and hygiene practices. Some of the community members have knowledge and awareness about the importance of sanitation and hygiene but still they don't want to do something for their community. Majority of the people are dependent on government and other sectors. Therefore this research is conducted to see how the behavior of the community can be changed to make them independent. This is a quantitative study in which questionnaire is adapted on Lickert Scale. This research is conducted in rural areas of 3 districts of Punjab, Pakistan which are Layyah, Rahim Yar Khan and Vehari. In this study sample size was 300 respondents in which both males and females are included. Demographics of the respondents are explained through figures. Then the reliability of the data was checked through Cronbach's Alpha value of all variables. Inferential Statistics (regression and correlation) are applied with the help of SPSS software. The result of this research explains that communication has more significant relationship with the community behaviour change and its impact is greater than subsidies/incentives. That means if the communication is done effectively the behaviour of the community can be changed for the long term.

Keywords: *WASH (Water, Sanitation & Hygiene), Communication, Subsidies/Incentives, Sanitation & Hygiene approaches, Behavior Change/Consumer behavior, Community Mindset.*

INTRODUCTION

Sanitation Overview

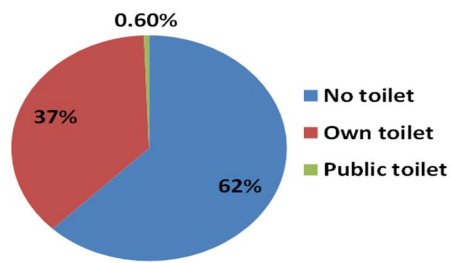
The livelihood and well-being of a nation are expected to improve through adequate sanitation and better hygiene. In spite of the importance of safe water supply, hygiene practices, adequate sanitation and sanitation services delivery has not been given that attention which it deserves in a country to improve the health status of a nation. Sanitation means the safe treatment and disposal of human waste or sewage. In broader term it is also defined as “environmental sanitation,” which includes excreta, solid waste, sludge (dirty water), air quality and drainage (removal of natural water including rain or snow). The field of sanitation throughout the developed and developing world tends to be ignored due to its powerful ability to disgust and undesirable nature while it is the most important part of our daily life. In present world we don't want to discuss this unpleasant word but its true harm is when the hygiene is not properly practiced and the waste is not properly disposed of which ultimately results in serious disease and death (George, 2008). Various programs try to find out ways to improve water supplies, enhance the provision of sanitation and behavior change towards hygiene practices is often called “WASH” program (water, sanitation and hygiene).

Background

In present time, 2.5 billion of the population lack access to adequate sanitation, from which more than one billion are present in Asia and 1.2 billion people in Sub-Saharan Africa (WHO, UNICEF (2010). Sanitation coverage in urban areas is 71% while in rural areas it is about 39%. Inadequate sanitation related diseases causes approximately 80 percent of the disease burden in developing countries (Sparks, 2010), it leads to approximately 1.7 million deaths every year from diarrheal diseases (WHO/UNICEF, 2005). More than 80 percent of deaths related to diarrheal diseases can be attributed to poor sanitation, unsafe drinking water and hygiene facilities (Pruss-Ustun et al., 2008). Child mortality rate increased due to diarrheal diseases (Checkley et al., 2008; Schmidt et al, 2009; WHO, 2009; Spears et al., 2013).

Sanitation Marketing

To understand sanitation marketing in depth, it is needed to have knowledge on social and commercial marketing. Sanitation marketing is a combination of both social and commercial marketing (WSP, 2011). “A process of creating, communicating, and delivering benefits to the target population in order to obtain desired results for the profit of the society is Social marketing” (Nancy R., Michael L., and Smith, 2011). Commercial marketing can shape our lives by influencing social values and norms and provide societal benefits (Bone & Kurtz, 2006). Thus social marketing is the application of commercial marketing tools where its main objective is the public good (Rob Donovan, 2011). Thus sanitation marketing is a latest approach which can be done through commercial and social marketing by ensuring that people has access to toilets (WSP, 2011). It uses multiple ranges of interventions to raise household demand for adequate sanitation (Jenkins MW, Scott B 2007). Sanitation marketing actually deals with both demand and supply side interventions to ensure that goods and services which will supply to the consumers are according to their requirements (WSP, 2011).



Why Sanitation Marketing?

The basic purpose of sanitation marketing is to bring about change in the behavior of people and society. Different researches have shown that there is lack of sanitation all over the world. People have no awareness about its importance. Therefore according to a study there is only 37% of total population who have their own toilets. This shows that the ratio of toilet users is very small. Therefore diseases are spreading very fast among people.

Many years ago, traditional approach which was used for sanitation marketing was supply driven. In this approach toilets and subsidies were provided to the communities for their usage. But this practice no longer exists because still latrines were not used by the people. This shows that providing them toilets is not the solution of this matter. Environment can't become clean till there is no change in the behavior of people (WSP, 2011).

Sanitation in Pakistan

Pakistan is the sixth most populous country. According to the recent survey its population is over 186 million which shows that population growth rate stands at 1.49% in 2014. So it is very necessary to provide at least basic needs to the people. In Pakistan no proper sanitation facilities are available to people. In preventing risks of multiple diseases such as diarrhea, dysentery, and typhoid sanitation facilities play a very important role. A household is classified into two forms: Those who have improved toilets which are used only by household members and those who separate waste from human contact (WHO and UNICEF, 2010). A total of 59% of households have an improved, toilet facility which is not shared with other people and 11% use a shared facility. While in case of urban households the ratio is 86% and 45% respectively. About 30% of households use a non-improved toilet facility. 20% of households have no toilet facility, an improvement from 2006-07, when 30 percent of households reported having no toilet facility (NKIPS and Macro International, 2008).

Purpose Statement

The basic purpose of this study is to identify the sanitation marketing conditions in Pakistan. As the world is growing and population increasing various health issues are occurring. Multiple diseases are spreading very fast and some of them even cause death. So the death ratio is also increasing day by day especially among the children. There are various reasons behind this, but major portion is covered by unsafe water supply, unimproved sanitation and poor hygiene facilities. Hence it is estimated that the death ratio of children per year is 9.7 million before reaching the age of five (UNICEF, 2008), 1.6 million die from diarrheal diseases, and 1.4 million are caused by poor sanitation and unsafe drinking water facilities (WHO, 2008). This study is conducted in 3 districts of Punjab in which Rahim Yar Khan, Vehari & Layyah are included. Punjab is 55% of the total population of Pakistan. In rural areas of Punjab the usage of latrines is 42%, hand washing facilities are 45%, drainage is 26% and solid waste management is only 1% (PASOCAN, 2015). Open defecation status in 3 districts of Punjab is Layyah 39%, RY Khan 32% & Vehari 25.3%.

Research Gap

Many studies have been done on sanitation marketing but not in the context of Pakistan. Previous studies described sanitation conditions in multiple countries i.e. India, Ghana, Tanzania, Benin, Bangladesh, Malawi etc (Yaw, 2010; Leonie, 2011) and focused on the adoption and

implementation of sanitation marketing strategies and approaches within the selected territories. Although prevailing literature is evident for the discussion of sanitation marketing, still there is a dearth of research in terms of behavior of community in terms of understanding the concept of sanitation marketing and its role in people's lives. There is a vast study on Behavior change and Behavior change theories but those theories are not related with sanitation behavior change. It is not clear from previous studies that which factor or variable has most influence on Behavior change. Literature on water and sanitation (W & S) provides insufficient information about the experiences of rural communities that have engaged the private sectors in water and sanitation service delivery (Danert et al., 2015). Not only in social sciences but also in the in the field of marketing it is comparatively a new field.

Research Hypothesis

Hypothesis 1

H1: There was a significant relationship between Communication & Community Behavior.

H0: There was no significant relationship between Community & Community Behavior.

Hypothesis 2

H1: There was a significant relationship between Subsidies/Incentives & Community Behavior.

H0: There was no significant relationship between Subsidies/Incentives & Community Behavior.

LITERATURE REVIEW

History is evident for the significance of sanitation marketing for a better future of the nations. Healthy nations can give healthy future to their upcoming generations whereas a child's health is heavily relying on clean and pure water, hygiene and improved sanitation (Beyer, 1987).

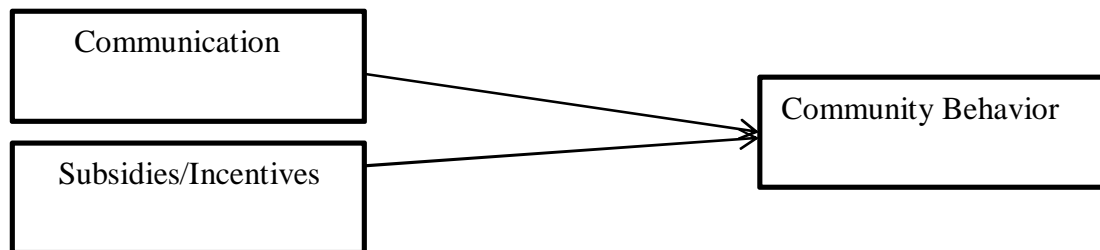
Thus technical support from field offices of development sectors was necessary for water supply and sanitation programs (Beyer, 1987). Development sectors cannot achieve their goals without the support of government. Thus many organizations started thinking about to provide technical support to the community. Actually it was needed to change the behavior of people to make them independent rather than providing them technical support. Therefore, by the end of the 70s, government and development organization realized that their approach of providing technical support of water and sanitation was not effective. It is essential for the people to recognize the importance of clean drinking water and adequate sanitation facilities. There is a huge number of people who lack access to safe drinking water and improved sanitation facilities (Pacey, 1978) and this amount is increasing day by day (WHO). Due to poor hygiene, unimproved sanitation facilities and lack of access to safe drinking water is leading towards the death of children. Each year 9.7 million children die before reaching the age of five (UNICEF, 2008), 1.7 million die from diarrheal diseases, and 1.4 million are caused by poor sanitation and unsafe drinking water facilities (WHO, 2008). In more developed and developing countries there is big difference in adequate sanitation. In developing countries, people often dispose of excreta using inadequate sanitation options, if they are not defecating openly. While in more developed countries, adequate sanitation refers to the normal flush toilet. Inadequate sanitation related diseases causes approximately 80 percent of the disease burden in developing countries (Sparks, 2010), it leads to approximately 1.7 million deaths every year from diarrheal diseases (WHO/UNICEF, 2005). Out of 163 developing countries, only 57 countries have conducted the calculation of poor since 1992 and 92 have so far undertaken such a task (George, 2008). Water is the major component of life. Without water nobody can survive. Therefore, it is called "Water for Life" (WHO, 2005). To provide water supply and adequate sanitation facilities to the community, it is important that

government and other organizations show their commitment towards water and sanitation (WHO, 2005). Improved sanitation and water will speed the achievement of all eight MDGs (WHO/UNICEF, 2005). The world met the MDG for water at the end of 2011 but is expected to miss the sanitation goal by more than a billion people (WHO, 2012). In developing countries, the allocated budget for water supply and sanitation is very less. As, the government of developing countries allocate and devote only 0.5 percent of their budgets on average to water and sanitation or ‘Watson’ (George, 2008). Lack of sanitation budget is not due to the political benefit but also due to unfortunate development mishaps arising from day first, as a historical lack of definition related to sanitation; second, lack of community participation: and, third, trouble while deciding the best way to finance it.

Theoretical Framework

In this research two independent variables are used which is Communication and Subsidies/Incentives. Consumer Behavior is dependent variable.

Theoretical Model



METHODOLOGY

Participants

Respondents are actually the community members of selected villages. Gender is categorized as males and females respondents. In this research the data was collected from 135 males and 165 females. 45 % are males and 55% females. Age is categorized into four groups which are: 15-25 years, 26-35 years, 36-45 years and 46 & above. The result of the frequency table shows that maximum numbers of respondents in the sampling frame are from the age group of 26-35. It is clear that out of the total sampling frame of 300, 168 respondents were belonging to this age group represent 56.0% share. Similarly, 72 respondents were belonging to the age group of 15-25 years which represent 24.0% share. 60 respondents were belonging from the age group of 36-45 years which represent 20.0% share of the selected sample. No questionnaire has been filled from the last age group which is 46 & plus.

Research Design

Research design deals with logical problems (Yin, 1989). Before data collection or analysis, social research needs a structure or a design. The purpose of research design is to ensure that the obtained evidences are enough capable to answer the research questions. Research Design is the plan of what data to gather, how and when collect the data, and how to analyze the data obtained. Research site means selection of that area from where you want to collect data. In this study, research site is the village level communities of three districts of Punjab, Pakistan.

Measures

Analysis is done through SPSS software. In which “Demographic Profile of respondents, Descriptive Statistics and Inferential Statistics (regression, correlation and hierarchical regression) are applied.” Descriptive statistics provide the information about the minimum, maximum, mean and standard deviation of the independent and dependent variables. Mean value gives us the idea about the central tendency of the values of a variable and Standard deviation gives the idea about the dispersion of the values of a variable. Inferential statistics are that type of statistics which is used to make conclusions about a population from a sample based on the statistical relationships or differences between two or more variables using statistical tests in order to make predictions about the future. Simply it tells us the relationship between two or more variables. In which correlation and regression test is used. To see the impact regression is applied while for moderation hierarchical regression is used. So moderation is test to see the effect of culture on independent variables.

Procedure

In research, multiple methods are used for data collection. In this research positivism paradigm is used. Therefore quantitative methodology is used for data collection (Weaver and Olson). This is a Quantitative Study for which questionnaire is adapted and re-structured to collect the data. The questionnaire which is used in this study covers demographic variables as well as dependent, moderator and independent variables are included in it and are based on Likert Scale. This questionnaire is comprised on 54 questions which are divided into six parts. 36 questions are designed for independent variables which are Sanitation (Personal Hygiene and Information on Hand washing), Communication and Subsidies/Incentives. 13 questions are related to dependent variable which is Consumer Behavior and 4 questions are related to moderator which is Culture in this research. For this research selected population is belong to villages. Therefore questionnaire is translated into URDU for their convenience. Data is collected from both males and females of RYK, Layyah and Vehari. These questionnaires are filled by community members of selected villages. Some questions were adapted from the formative research of Plan International Pakistan which was conducted through a consultancy firm “Development Strategies.” Some were adapted from oxford journals, Abraham and Michie (2008) research.

The result of reliability test shows that the data is reliable. Reliability of the data can be seen through Cronbach’s Alpha value. Total 300 questionnaires were filled from three selected districts. Communication has 7 questions, Subsidies/Incentives have 4 questions and Community behavior has 13 questions. All these variables are firstly computed and then reliability has applied. Cronbach’s Alpha Value of Communication, Subsidies/Incentives and Community behavior are 0.76, 0.70 and 0.73. All the above mentioned values show that the data is reliable.

Beta value of communication shows that 19 unit changes in independent variable brought .67 unit changes in dependent variable which is a very big change in dependent variable due to selected independent variable. Its significance value shows that communication and community behavior both has significant relationship with each other. While Beta value of subsidies/incentives shows that 17 unit changes in independent variable brought .14 unit changes in dependent variable. Its significance value shows that subsidies/incentives and consumer behavior both has significant relationship with each other. But due to the communication community behavior can be changed more as compared to subsidies/incentives.

The value of the coefficient of determination (R^2) is 0.57. This shows that the relationship between dependent and independent variables is around 60%. Due to the independent variable

60% change occurs in dependent variable which is Consumer behavior. The value of the adjusted coefficient of determination ($\text{adj. } R^2$) is 0.50, which shows that 60% variations in return on asset. F-statistic shows that the model is good fit or not. In this research the value of F-statistic is $F=250.766$ which are statistically highly significant at greater than five percent that exhibits that in the estimated model. Its significance value is .000 which shows that there is strong relationship between dependent and independent variables and the data is highly significant.

Correlation is used to check the strength of the relationship between variables. Its values vary between +1 and -1. When the values of correlation coefficient are around +1, it shows perfect correlation between variables. But when the values go towards 0 that means the correlation is weak between variables.

The correlation between dependent variable (Community Behavior) and independent variables (Communication & Subsidies/Incentives) has moderate relationship because its value is 0.7 which is greater than 0.3 and these have significant relationship with each other. Their significance value is 0.000 which is less than 0.005.

DISCUSSION

“Behavior change” is not an easy task. Although it is time consuming but has long lasting impact. Multiple approaches are required to change the behavior of people. Many researchers have worked on multiple approaches related to sanitation and hygiene. Sanitation means the safe treatment and disposal of human waste (Gorge, 2008). It is directly related to the environmental and health safety. Past experiences show that without proper communication and interaction with community no development work is succeed. People need clear understanding about everything so that they can accept and adopt those things. One of the major factors of inadequate sanitation is communication gap and lack of promotion. As communication plays a very important role in rural development (Nwosu, 1987). Thus various channels of communication can be used for the promotion of sanitation and can play significant role in change and sustainability in people’s behavior related to sanitation (Cairncross, 2004). The result of this research shows that communication is strongly and significantly related to consumer behavior. That means if the messages are properly communicated to the community then their behavior can be changed. The influence of communication on behavior change is more. Many customers are sensitive and dependent on the relationship between quality of the product and incentives on those items (Kahneman and Tverski, 1979) or (Hines and Thaler, 1995). Reward/Incentive studies are actually related to their behavioral perspective. It depends how incentive programs are treated in sanitation marketing? Some sanitation approach argues that incentives and subsidy should never be given to the community. While some argue that incentives should be given to the community only when a community achieves ODF status (Amaka, Teresa & Fred, 2010). Incentives can be monetary and non-monetary. Non-monetary incentives still serve to motivate people such as acknowledgment ceremony for obtaining ODF status (Amaka, Teresa & Fred, 2010). Incentives can involve the financial reward or the threat of penalty (Albert, UNDP, World bank & WSP, 1997).

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Appendix:

Table 1: Gender

Gender	Frequency	Percentage
Males	135	45.0
Females	165	55.0
Total	300	100.0

Table 2: Age of the Respondents

Age	Frequency	Percentage
15-25 Years	72	24.0
26-35 Years	168	56.0
36-45 Years	60	20.0
46+ Years	0	0

Table 3: Marital Status of Respondents

Marital Status	Frequency	Percentage
Single	99	33
Married	201	67.0

Table 4: Districts of Respondents

Districts	Frequency	Percentage
Rahim Yar Khan	100	33
Layyah	100	33
Vehari	100	33
Total	300	100

Table 5: Reliability of Data

Constructs	N	No. of items	Cronbach's Alpha
Communication	300	7	0.76
Community Behavior	300	13	0.73
Subsidies/Incentives	300	4	0.70

Table 6: Regression

R ²	Adj. R ²	F-Statistic	Sig.
0.57	0.50	250.766	0.000 ^a

Table 7: Correlation

		CB	CO	SI
CB	Pearson Correlation	1	0.676**	0.570**
	Sig. (2-tailed)		0.000	0.000
	N		300	300
CO	Pearson Correlation		1	0.405**
	Sig. (2-tailed)			0.000
	N			300
SI	Pearson Correlation			1
	Sig. (2-tailed)			
	N			